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EXAMINER	
WILLS, LAWRENCE E	

ART UNIT	PAPER NUMBER
2625	

NOTIFICATION DATE	DELIVERY MODE
05/13/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/717,510	VAN DER HEIJDEN, GERARDUS J.E.L.	
	Examiner	Art Unit	
	LAWRENCE E. WILLS	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 12, 2010 has been entered.

Response to Arguments

2. Applicant's arguments filed February 12, 2010 have been fully considered but they are not persuasive. Applicant argues:

> a. Thus the scanner must be provided with a print head that makes the same movements as the scan head and, the conveyance of a document or a recordable sheet along the preceding direction (please see Fig. 6) has to be forward and backward. This is necessary, first, in order that the printed pattern has a number of lines that are really straight, which is obtained by moving the paper forward and backward when printing the pattern. Secondly, after the pattern has been printed, the paper is fed back so as to be able to scan it and to determine the image errors. Clearly, the method disclosed in the Ryu reference only works for a limited class of scanners. Consistent with this argument, claims 1 and 10 have been amended to provide limitations whereby the scan head does not move relative to the apparatus. Thus, the device parameters under consideration have now been limited to mechanical parameters, such as for example, scanning speed.

However, Ryu'386 teaches the scanning module fixedly mounted on the supporting body column 4, line 30.

> b. In addition, the Ryu reference discloses carrying out a correction each time that a document is scanned in. Thus, the Ryu reference fails to teach carrying out once, an all time correction of a parameter. This feature has been added to claims 1 and 10 of the present application, wherein said claims now recite that the correction action is carried out in continuation of the scanning of the test original and not each time before

> a normal scanning action, as is disclosed in the Ryu reference. Accordingly, it is believed that the present amendments made to claims 1 and 10 further distinguish the method and apparatus of the present invention from the Ryu reference.

However, notice in Fig. 5B of Ryu'386 the corrections are made before the document has finished scanning, teaching the newly added limitation of the correction action is carried out in continuation of the scanning of the test original

> c. Office Action letter, the Horobin reference discloses, in a digital copier, maintaining conformance of a copied image with an original image, particularly in the aspects of placement of the image relative to the edge of the print sheet, as well as magnification of the printed image relative to the original. The crux of the method disclosed in the Horobin reference is that a copy of a test chart is inspected by an operator with the reading derived from an inspection of the output sheet being entered into the copying machine. Subsequently, the copier adjusts at least one attribute. The chart is designed in such a way that numbers may be read out from the copy of the chart. Thus, from the teachings of the Horobin reference it is understandable that the reading out by a human being reflects a manual operation which is cumbersome, inaccurate and error-prone, despite the feature of providing a scale, as disclosed as element 102 in Fig. 2 of the reference. In utilizing the teachings of the Horobin reference, it should be realized that since a copy of a test chart is used, it is not possible to discriminate where any deviations that have to be corrected, originate, that is, in the scanner part or in the printer part. Accordingly, it is possible that a deviation originating in the printer path is corrected by correcting a parameter in the scanner path. This, of course, is detrimental to the good working of the apparatus as a whole, that is, compensating for an error in the apparatus by introducing another error on another location in the apparatus. Also, the method is not suitable for use for a scanner that is used for scanning to a file, since the method disclosed in the Horobin reference allows a deviation in the scanner path to be corrected by a compensation in the printer path. The image that will be stored in a file is then not compensated for. Thus, by using, in the Horobin reference, the copy path for the test chart in the resulting copy of the test chart, all deviations over the entire copy path (including the scanner path and the printer path) accumulate in the copy of the test chart. Since it is not determinable from where a certain deviation originates, this creates an intrinsic disadvantage of the method disclosed in the Horobin reference.

However, Horobin'477 teaches utilizing a zoom factor (i.e. magnification in column 3, line 28) in the transport direction (i.e. vertical, column 3, line 32),

wherein the test original (i.e. Fig. 2), contains a leading edge (i.e. edge of sheet, column 3, line 56) and comprises two sides of at least one marking in known parallel displacement and parallel with the leading edge (i.e. Fig.2 shows Zone A and C or B and D which are parallel with each other and the leading edge), and a correction value for the zoom factor (i.e. magnification in column 3, line 28) based on the actual parallel displacement (i.e. error in lateral displacement in column 4, lines 32-35 and lines 48-52) of the two sides in the electronic image. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3, 6, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu (US Patent No. 6,295,386) in view of Horobin (US Patent 7,106,477)

Regarding claims 1 and 10, Ryu'386 teaches a method for calibrating (correcting image errors, abstract) a transport scanner (a shuttle type of a scanner, abstract) apparatus arranged for scanning a two-dimensional original (the recordable paper on which the pattern is printed, column 6, line 9) by moving the original along (recordable paper moved, column 4, line 36) an optical arrangement fixedly mounted to the apparatus (scanning module fixedly mounted, column 4, line 30) and forming an electronic image (i.e. digital pattern data, column 6, line 27) thereof for subsequent usage in an information handling system (i.e. pattern data is stored though the memory buffer in the RAM, column 6, line 28), said scanning and forming of the electronic image being executed under the control of device parameters (control section controls the scanning module to perform a series of scanning operation, column 4, lines 64-65) that control the processes of making a mapping (the control section compares the pattern data stored in the RAM with the reference data stored in the ROM, column 6, lines 30-31) from an image on the 2-dimensional original (RAM has temporary data, specially the scanned image data, column 5, lines 5-6) to an electronic image in memory (ROM has the correcting table and reference data corresponding to the preset and predetermined pattern to correct errors of the scanned image data, (column 5, lines 2-5), which

comprises: scanning a test original (i.e. S5, scan the pattern, Fig. 5A), provided with a test image (Fig. 6A, 6B), and forming an electronic original image thereof (i.e. digital pattern data, column 6, line 27), the test image containing at least one marking at a predetermined position (i.e. notice the markings on document in Fig. 6A), in continuation of the scanning of the test original(notice in Fig. 5B of Ryu'386 the corrections are made before the document has finished scanning) automatically calibrating the apparatus based on said at least one marking in an electronic bit map image formed therefrom (immediately after scanning the pattern as S5, Fig. 5A, the scanned data is compared to a preset reference data to calculate errors, in S6, Fig. 5A, and further S7, Fig. 5B corrections are made based on errors calculated).

Ryu'386 fails to teach utilizing a zoom factor in the transport direction, wherein the test original, contains a leading edge and comprises two sides of at least one marking in known parallel displacement and parallel with the leading edge, and the method comprises a correction value for the zoom factor based on the actual parallel displacement of the two sides in the electronic image and correction values for the mechanical device parameters.

Horobin'477 teaches utilizing a zoom factor (i.e. magnification in column 3, line 28) in the transport direction (i.e. vertical, column 3, line 32), wherein the test original (i.e. Fig. 2), contains a leading edge (i.e. edge of sheet, column 3, line 56) and comprises two sides of at least one marking in known parallel displacement and parallel with the leading edge (i.e. Fig.2 shows Zone A and C

or B and D which are parallel with each other and the leading edge), and a correction value for the zoom factor (i.e. magnification in column 3, line 28) based on the actual parallel displacement (i.e. error in lateral displacement in column 4, lines 32-35 and lines 48-52) of the two sides in the electronic image and correction values for the mechanical device parameters (feeding mechanisms column 5, lines 20-35).

Having a shuttle type scanner calibration system of Ryu'386 reference and then given the well-established teaching of Horobin'477 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the calibrating system of Ryu'386 reference to include zoom factor correction as taught by Horobin'477 reference, since the placement and magnification of original images would be significant to a user of the shuttle type scanner and the results of the combination would have been predictable.

Regarding claim 3, Ryu'386 fails to specifically teach wherein at least one marking on the test image has at least one side flush with an edge of the test original; and in the step of scanning the test original, a greater area than the area of the test original is scanned.

Horobin'477 teaches wherein at least one marking on the test image (i.e. as in Fig. 2) has at least one side flush with an edge of the test original (i.e. as in Fig.2 Zones A, B, C, and D are flush with the edge); and in the step of

scanning the test original (i.e. feeds into the input scanner in column 3, lines 45-46), a greater area than the area of the test original is scanned (i.e. adjusting the initiation of image output relative to the drawing a sheet from a stack in column 5 line 55).

Having a shuttle type scanner calibration system of Ryu'386 reference and then given the well-established teaching of Horobin'477 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the recording pattern of Ryu'386 reference to include a recording pattern with a side flush with an edge of the test original as taught by Horobin'477 reference the results of the combination would have been predictable and would have increased calibration errors diagnosed by the calibration system.

Regarding claim 6, Ryu'386 fails to specifically teach the zoom factor is perpendicular to the transport direction, wherein the test original comprises two sides of at least one marking parallel to the transport direction, and wherein a correction value for the zoom factor perpendicular to the transport direction is based on a ratio of the distance between the two sides in the electronic image and the actual distance on the test original.

Horobin'477 teaches the zoom factor (i.e. magnification in column 3, line 28) is perpendicular to the transport direction (i.e. horizontal, column 3, line 32), wherein the test original (i.e. Fig. 2) comprises two sides of at least one

marking parallel to the transport direction (i.e. Fig.2 shows Zone A and C or B and D which are parallel with each other and the transport direction), and wherein a correction value for the zoom factor perpendicular to the transport direction (i.e. horizontal magnification in column 3, line 28) is based on a ratio of the distance between the two sides in the electronic image and the actual distance on the test original(i.e. error in lateral displacement in column 4, lines 32-35 and lines 48-52).

Having a shuttle type scanner calibration system of Ryu'386 reference and then given the well-established teaching of Horobin'477 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the calibrating system of Ryu'386 reference to include zoom factor correction as taught by Horobin'477 reference, since the placement and magnification of original images would be significant to a user of the shuttle type scanner and the results of the combination would have been predictable.

Regarding claim 8, Ryu'386, in combination with Horobin'477, teaches wherein the test original is made of a material that has an appropriately conforming and constant size (Fig. 6A Ryu'386), and carries at least one marking for automatically calibrating the apparatus (Fig. 6A Ryu'386).

5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu (US Patent No. 6,295,386) in view of Horobin (US Patent 7,106,477) as applied to claim 3 above, and further in view of Sato (US Patent 5,245, 440).

Regarding claim 4, Ryu'386 in view of Horobin'477 teaches including the step of assessing a correction value (i.e. as in Ryu'386 Fig. 5B, S7) and the test original contains a marking with one side flush with the leading edge (i.e. as in Horobin'477 Fig. 2), but fails to teach a CCD is used for scanning the two-dimensional original and features a leading edge timing signal for initiating the read out of the CCD, wherein a correction value for the leading edge timing signal is assessed based on the position of the one side in the electronic image in relation to the actually used leading edge timing signal.

Sato'440 teaches a CCD (i.e. CCD in column 3, line 58) is used for scanning the two-dimensional original (i.e. the document to be read in column 2, line 55) and features a leading edge timing signal for initiating the read out of the CCD (i.e. read start time in column 3, line 58), wherein a correction value for the leading edge timing signal (i.e. time of error in column 4, line 30 in addition, T1 and T2 in column 5, line 25) is assessed based on the position of the one side in the electronic image in relation to the actually used leading edge timing signal (i.e. formulae (1) and (2), equivalent to T1 and T2, correspond to the error between the bottom reference line and the actual read line X in column 5, lines 25-35).

Having a system of Ryu'386 in view of Horobin'477 reference and then given the well-established teaching of Sato'440 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ryu'386 in view of Horobin'477 reference to calibrate a scanners leading/trailing edge timing signal as taught by Sato'440 reference since the results of the combination would have been predictable. The suggestion for doing so would have been to preserve the placement and magnification of original images increasing the effectiveness of the scanner calibration.

Regarding claim 5, Yun'405 in view of Motamed'312 and in further view of Horobin'477 teaches including the step of assessing a correction value (i.e. image processor performs correcting of the errors for decline of pattern data in Yun'405 column 6, lines 17-22) and a trailing edge for stopping the read out of the CCD (i.e. trail edge in Horobin'477 column 5, line 40), wherein the test original contains a marking with one side flush with the trailing edge (i.e. as in Horobin'477 Fig. 2). However, Yun'405 in view of Motamed'312 and in further view of Horobin'477 fails to teach a CCD is used for scanning the two-dimensional original and a timing signal and wherein a correction value for the timing signal is assessed based on the position of the one side in the electronic image in relation to the actually used timing signal.

Sato'440 teaches a CCD is used for scanning the two-dimensional original (i.e. CCD in column 3, line 58) and a timing signal (i.e. read start time in column 3, line 58) and wherein a correction value for the timing signal (i.e. time of error in column 4, line 30 in addition, T1 and T2 in column 5, line 25) is assessed based on the position of the one side in the electronic image in relation to the actually used timing signal (i.e. formulae (1) and (2), equivalent to T1 and T2, correspond to the error between the bottom reference line and the actual read line X in column 5, lines 25-35,).

Having a system of Ryu'386 in view of Horobin'477 reference and then given the well-established teaching of Sato'440 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ryu'386 in view of Horobin'477 reference to calibrate a scanners leading/trailing edge timing signal as taught by Sato'440 reference since the results of the combination would have been predictable. The suggestion for doing so would have been to preserve the placement and magnification of original images increasing the effectiveness of the scanner calibration.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu (US Patent No. 6,295,386) in view of Horobin (US Patent 7,106,477) as applied to claim 1 above, and in further view of Lodwick (US Patent 6,226,419).

Regarding claim 7, Ryu'386 in view of Horobin'477 fails to teach the apparatus features a left or right margin position stop, wherein the test original utilizes a marking with one side flush with the left or right edge parallel to the transport movement; and for each line recording is initiated at a first available pixel element of the CCD or recording is stopped at a last available pixel element; and a correction value for the left or right margin signal is assessed based on the difference between the first or last available pixel element and the one side of the marking, with the one side being flush with the left or the right edge, respectively.

Lodwick'419 teaches the apparatus features a left or right margin position stop (i.e. margin mark in column 7, line 28), wherein the test original (i.e. calibration sheet 1 in Fig.3) utilizes a marking with one side flush with the left or right edge parallel to the transport movement (i.e. left and right margin mark in column 6, lines 10-15); and for each line recording is initiated (i.e. scanning may start in column 7, line 18) at a first available pixel element of the CCD (i.e. right edge of the shaded region in column 7, line 18) or recording is stopped at a last available pixel element (i.e. point G in column 7, line 27)); and a correction value for the left or right margin signal is assessed (i.e. error between the desired distance and the measure distance in column 7, lines 49-55) based on the difference between the first or last available pixel element and the one side of the marking, with the one side being flush with the left or the right edge, respectively.

Having a system of Ryu'386 in view of Horobin'477 reference and then given the well-established teaching of Lodwick'419 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ryu'386 in view of Horobin'477 reference to calibrate a scanners left and right margin as taught by Lodwick'419 reference since the results of the combination would have been predictable. The suggestion for doing so would have been to preserve the placement and magnification of original images increasing the effectiveness of the scanner calibration.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu (US Patent No. 6,295,386) in view of Horobin (US Patent 7,106,477) as applied to claim 8, and further in view of Fukuda (US Patent 6,624,876).

Regarding claim 9, Ryu'386 in view of Horobin'477 fails to teach markings with a side flush with an edge of the test original are obtained by cutting the corresponding edge of the test original.

Fukuda'876 teaches markings with a side flush with an edge of the test original (i.e. leading end in abstract) are obtained by cutting the corresponding edge of the test original (i.e. cutter cuts the leading end portion off in abstract).

Having a system of Ryu'386 in view of Horobin'477 reference and then given the well-established teaching of Fukuda'876 reference, it would have

been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ryu'386 in view of Horobin'477 reference to calibrate a scanner using a cut test image as taught by Fukuda'876 reference since the results of the combination would have been predictable. The suggestion for doing so would have been to increase the effectiveness of the scanner calibration.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAWRENCE E. WILLS whose telephone number is (571)270-3145. The examiner can normally be reached on Monday-Friday 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/King Y. Poon/
Supervisory Patent Examiner, Art Unit 2625

LEW
May 7, 2010